

# Monitoring Organic Contaminant Fluxes Following Dam Removal Utilizing Passive Sampler Technology

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Restoration of riverine habitats and their associated ecosystems is a growing priority for government agencies (e.g., USEPA, NOAA, USDA), as well as non-profit conservation organizations (e.g., American Rivers). Dam removal is a major component of many restoration projects credited with reintroducing fish species, improving water and habitat quality, and increasing recreation potential. Many locations being considered for restoration, however, have been previously impacted by discharges of chemical pollutants and the potential exists for re-release of these contaminants following dam removal or other restoration activities. To date, few if any restoration projects which involve dam removal have measured changes in the transport of contaminants during and after dam removal. In this study we plan to measure changes in the fluxes of several classes of organic contaminants (e.g. PAHs, PCBs) in an urbanized river scheduled for restoration by removal of an existing dam. Passive samplers along with sediment traps will be employed to measure changes in the flux of dissolved and particulate contaminants. Data from preliminary deployments of passive samplers in this river indicate that this technology can be successfully applied to evaluate changes in contaminant fluxes over time. Results from this study will be used to evaluate the passive sampler approach and improve our ability to evaluate the short and long-term impact of ecological restoration activities.

Keywords: Dam removal; Contaminated Sediment; resuspension; Habitat restoration

## **PURPOSE STATEMENT**

Dam removal is becoming a regular activity in the effort to restore riverine habitats and ecosystems. Many locations with dams have contaminated sediments that may be susceptible to release during removal and restoration activities. This presentation presents a conceptual approach for assessing the release and remobilization of previously sequestered contaminants from the Pawtuxet River, an urbanized river in Rhode Island during the dam removal process and ecosystem restoration activities.